

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Previously Presented) Apparatus for determining a frequency offset error, comprising an input for receiving a digitally coded frequency demodulated signal, said frequency demodulated signal being processed by

digital means for performing a correlation in order to determine whether a correlation criterion is fulfilled,

digital means for performing a minimum-maximum evaluation in order to determine whether a minimum-maximum criterion are fulfilled, and

digital processing means for calculating a current offset of the frequency demodulated signal and to cancel the current offset if both criteria are fulfilled, wherein the digital means for performing the minimum-maximum evaluation determines whether expected peaks of positive and negative half-waves of the frequency demodulated signal have predefined distances.

2. (Previously Presented) The apparatus of claim 1, wherein the digital means for performing a correlation comprise a correlator, a peak detector and a comparator.

3. (Previously Presented) The apparatus of claim 1, wherein the digital means for performing a minimum-maximum evaluation comprise two subtractors and two comparators.

4. (Previously Presented) The apparatus of claim 1, wherein the digital processing means comprise an average detector, an offset register, and an offset compensator to subtract the current offset stored in the offset register from the frequency demodulated signal.

5. (Previously Presented) The apparatus of claim 1, wherein the digital means for performing a correlation and the digital means for performing a minimum-maximum evaluation both provide signals to the digital processing means in order to cause the digital processing means to cancel the current offset.

6. (Previously Presented) The apparatus of claim 1, comprising two comparators serving as limiters followed by building blocks arranged to extract said frequency demodulated signal from a frequency shift keyed modulated signal.

7. (Previously Presented) The apparatus of claim 1 wherein the digital means for performing a correlation correlates the frequency demodulated signal with a time-limited sine wave signal, and determines whether the result of this correlation exceeds a certain threshold.

8. (Currently Amended) The apparatus of claim 1, wherein the digital means for performing a correlation provides an output signal indicating that the  $\alpha$ -criterion for a known sequence is fulfilled.

9. (Canceled)

10. (Previously Presented) The apparatus of claim 1, wherein the digital means for performing a minimum-maximum evaluation calculates two subtractions in order to compare four received symbols with corresponding amplitudes.

11. (Previously Presented) The apparatus according to claim 1, wherein the frequency demodulated signal is a digital coded signal.

12. (Previously Presented) The apparatus of claim 4, wherein the offset compensator is employed in order to continuously subtract a value stored in the offset register from the frequency demodulated signal.

13. (Previously Presented) The apparatus of claim 4, wherein the average detector is a sliding average detector that continuously generates a mean value of the frequency demodulated signal.

14. (Currently Amended) A receiver comprising:  
an apparatus for determining a frequency offset error, the apparatus including:  
an input for receiving a digitally coded frequency demodulated signal, said frequency demodulated signal being processed by,  
digital means for performing a correlation in order to determine whether a correlation criterion is fulfilled, and  
digital means for performing a minimum-maximum evaluation in order to determine whether a minimum-maximum criterion are fulfilled, said apparatus further comprising digital processing means to calculate the current offset of the frequency demodulated signal and to cancel the current offset if both criteria are fulfilled, wherein the digital means for performing the minimum-maximum evaluation determines whether expected peaks of positive and negative half-waves of the frequency demodulated signal have predefined distances.

15. (Previously Presented) The receiver of claim 14, comprising an analog front-end and a digital back-end, said apparatus for determining a frequency offset error being part of said digital back-end.

16. (Previously Presented) The receiver of claim 14 being designed to receive and process FSK or GFSK modulated antenna signals.

17. (Previously Presented) Apparatus for determining a frequency offset error, comprising an input for receiving a digitally coded frequency demodulated signal, said frequency demodulated signal being processed by

digital means for performing a correlation in order to determine whether a correlation criterion is fulfilled, wherein the digital means for performing a correlation comprise a correlator, a peak detector and a comparator,

digital means for performing a minimum-maximum evaluation in order to determine whether a minimum-maximum criterion are fulfilled, and

digital processing means for calculating a current offset of the frequency demodulated signal and to cancel the current offset if both criteria are fulfilled.

18. (Previously Presented) The apparatus of claim 17 wherein the digital means for performing a minimum-maximum evaluation comprise two subtractors and two comparators.

19. (Previously Presented) The apparatus of claim 17 wherein the digital means for performing a minimum-maximum evaluation calculates two subtractions in order to compare four received symbols with corresponding amplitudes.

20. (Previously Presented) Apparatus for determining a frequency offset error, comprising an input for receiving a digitally coded frequency demodulated signal, said frequency demodulated signal being processed by

digital means for performing a correlation in order to determine whether a correlation criterion is fulfilled,

digital means for performing a minimum-maximum evaluation in order to determine whether a minimum-maximum criterion are fulfilled, wherein the digital means for performing a minimum-maximum evaluation comprise two subtractors and two comparator, and

digital processing means for calculating a current offset of the frequency demodulated signal and to cancel the current offset if both criteria are fulfilled.

21. (Previously Presented) The apparatus of claim 20 wherein the digital processing means comprise an average detector, an offset register, and an offset compensator to subtract the current offset stored in the offset register from the frequency demodulated signal.

22. (Previously Presented) The apparatus of claim 20 wherein the digital means for performing a minimum-maximum evaluation calculates two subtractions in order to compare four received symbols with corresponding amplitudes.

23. (Previously Presented) Apparatus for determining a frequency offset error, comprising an input for receiving a digitally coded frequency demodulated signal, said frequency demodulated signal being processed by

digital means for performing a correlation in order to determine whether a correlation criterion is fulfilled,

digital means for performing a minimum-maximum evaluation in order to determine whether a minimum-maximum criterion are fulfilled, and

digital processing means for calculating a current offset of the frequency demodulated signal and to cancel the current offset if both criteria are fulfilled, wherein the digital processing means comprise an average detector, an offset register, and an offset compensator to subtract the current offset stored in the offset register from the frequency demodulated signal.

24. (Previously Presented) The apparatus of claim 23 wherein the digital means for performing a correlation correlates the frequency demodulated signal with a time-limited sine wave signal, and determines whether the result of this correlation exceeds a certain threshold.

25. (Currently Amended) The apparatus of claim ~~claim~~ 23, wherein the frequency demodulated signal is a digital coded signal.

26. (Previously Presented) The apparatus of claim 23, wherein the offset compensator is employed in order to continuously subtract a value stored in the offset register from the frequency demodulated signal.

27. (Previously Presented) The apparatus of claim 23, wherein the average detector is a sliding average detector that continuously generates a mean value of the frequency demodulated signal.

28. (Previously Presented) Apparatus for determining a frequency offset error, comprising an input for receiving a digitally coded frequency demodulated signal, said frequency demodulated signal being processed by

digital means for performing a correlation in order to determine whether a correlation criterion is fulfilled,

digital means for performing a minimum-maximum evaluation in order to determine whether a minimum-maximum criterion are fulfilled,

digital processing means for calculating the current offset of the frequency demodulated signal and to cancel the current offset if both criteria are fulfilled, and

two comparators serving as limiters followed by building blocks arranged to extract said frequency demodulated signal from a frequency shift keyed modulated signal.

29. (Previously Presented) The apparatus of claim 28 wherein the digital means for performing a correlation correlates the frequency demodulated signal with a time-limited sine wave signal, and determines whether the result of this correlation exceeds a certain threshold.

30. (Currently Amended) The apparatus of claim 28 wherein the digital means for performing a correlation provides an output signal indicating that the  $\alpha$ -criterion for a known sequence is fulfilled.[[.]]

31. (Previously Presented) Apparatus for determining a frequency offset error, comprising an input for receiving a digitally coded frequency demodulated signal, said frequency demodulated signal being processed by

digital means for performing a correlation in order to determine whether a correlation criterion is fulfilled,

digital means for performing a minimum-maximum evaluation in order to determine whether a minimum-maximum criterion are fulfilled,

digital processing means for calculating the current offset of the frequency demodulated signal and to cancel the current offset if both criteria are fulfilled, and

wherein the digital means for performing a correlation correlates the frequency demodulated signal with a time-limited sine wave signal, and determines whether the result of this correlation exceeds a certain threshold.

32. (Previously Presented) The apparatus of claim 31 wherein the digital means for performing a correlation and the digital means for performing a minimum-maximum evaluation both provide signals to the digital processing means in order to cause the digital processing means to cancel the current offset.

33. (Previously Presented) The apparatus of claim 31 wherein the frequency demodulated signal is a digital coded signal.

34. (Currently Amended) Apparatus for determining a frequency offset error, comprising an input for receiving a digitally coded frequency demodulated signal, said frequency demodulated signal being processed by The apparatus of claim 17

~~digital means for performing a correlation in order to determine whether a correlation criterion is fulfilled,~~

~~digital means for performing a minimum maximum evaluation in order to determine whether a minimum maximum criterion are fulfilled,~~

~~digital processing means for calculating the current offset of the frequency demodulated signal and to cancel the current offset if both criteria are fulfilled, and~~

wherein the digital means for performing a correlation provides an output signal indicating that the a criterion for a known sequence is fulfilled.

35. (Currently Amended) The apparatus of claim 17~~34~~ wherein the digital means for performing a correlation and the digital means for performing a minimum-maximum evaluation both provide signals to the digital processing means in order to cause the digital processing means to cancel the current offset.

36. Currently Amended) The apparatus of claim 31~~34~~ wherein the digital means for performing a correlation comprise a correlator, a peak detector and a comparator.

37. (Previously Presented) Apparatus for determining a frequency offset error, comprising an input for receiving a digitally coded frequency demodulated signal, said frequency demodulated signal being processed by

digital means for performing a correlation in order to determine whether a correlation criterion is fulfilled,

digital means for performing a minimum-maximum evaluation in order to determine whether a minimum-maximum criterion are fulfilled,

digital processing means for calculating the current offset of the frequency demodulated signal and to cancel the current offset if both criteria are fulfilled, and

wherein the digital means for performing a minimum-maximum evaluation calculates two subtractions in order to compare four received symbols with corresponding amplitudes.

38. (Previously Presented) The apparatus of claim 37 wherein the frequency demodulated signal is a digital coded signal.

39. (Previously Presented) The apparatus of claim 37 comprising two comparators serving as limiters followed by building blocks arranged to extract said frequency demodulated signal from a frequency shift keyed modulated signal.

40. (Currently Amended) Apparatus for determining a frequency offset error, comprising an input for receiving a digitally coded frequency demodulated signal, said frequency demodulated signal being processed by The apparatus of claim 31

digital means for performing a correlation in order to determine whether a correlation criterion is fulfilled;

digital means for performing a minimum-maximum evaluation in order to determine whether a minimum-maximum criterion are fulfilled;

digital processing means for calculating the current offset of the frequency demodulated signal and to cancel the current offset if both criteria are fulfilled, and

wherein the frequency demodulated signal is a digital coded signal.

41. (Currently Amended) The apparatus of claim 20 40 wherein the digital means for performing a correlation and the digital means for performing a minimum-maximum evaluation both provide signals to the digital processing means in order to cause the digital processing means to cancel the current offset.

42. (Currently Amended) The apparatus of claim 40 28 wherein the digital means for performing a correlation correlates the frequency demodulated signal with a time-limited sine wave signal, and determines whether the result of this correlation exceeds a certain threshold.